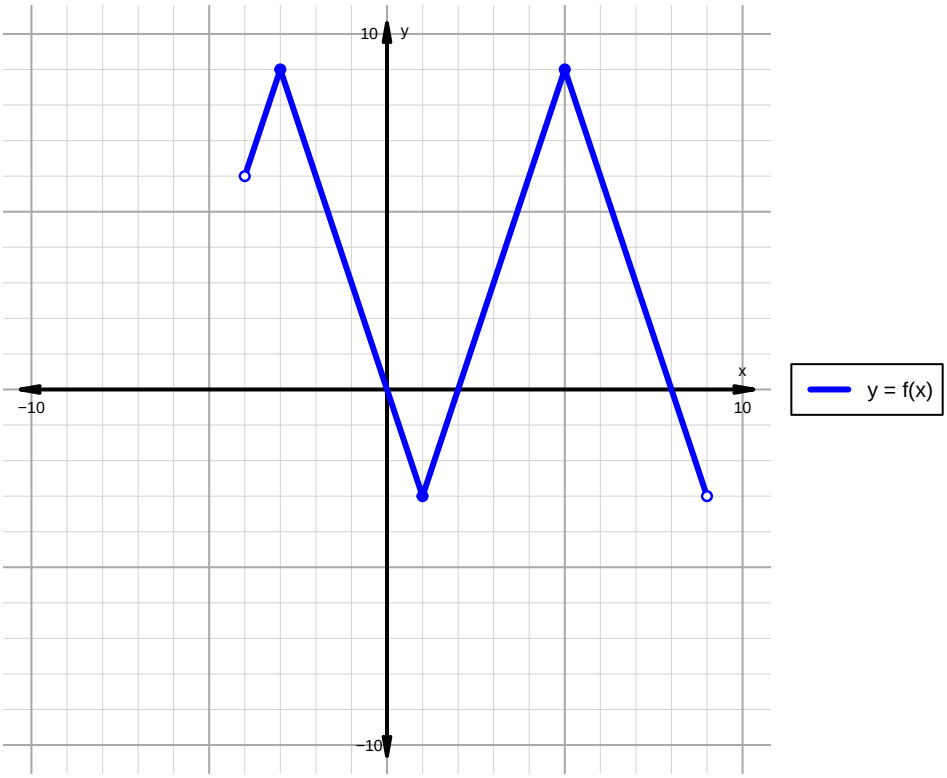
Name: Date:

Intervals, Transformations, and Slope Solution (version 54)

1. The function f is graphed below.



Indicate the following intervals using interval notation. Remember, you can use $\cup$ between two intervals to indicate the union. Except for range, all intervals will indicate x values; this is standard.

Feature	Where
Positive	$(-4, 0) \cup (2, 8)$
Negative	$(0, 2) \cup (8, 9)$
Increasing	$(-4, -3) \cup (1, 5)$
Decreasing	$(-3, 1) \cup (5, 9)$
Domain	$(-4, 9)$
Range	$(-3, 9)$

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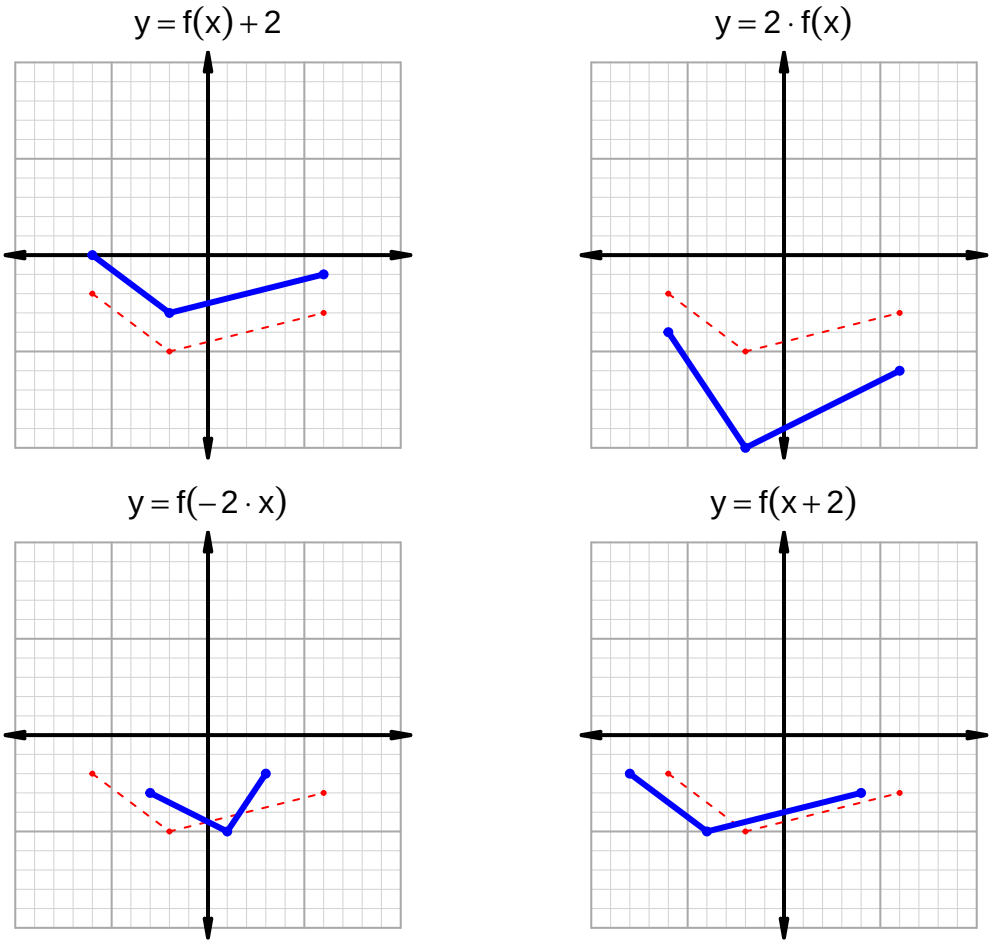
2. In the four graphs below, $y = f(x)$ is graphed as a dotted line. With a solid line, please graph the transformations indicated by the equations below.



3. Let function g be defined by the table below. Use the formula $\frac{g(x_2)-g(x_1)}{x_2-x_1}$ to find the average rate of change between $x_1 = 18$ and $x_2 = 67$. Express your answer as a reduced fraction.

x	$g(x)$
18	82
54	18
67	54
82	67

$\frac{g(67)-g(18)}{67-18} = \frac{54-82}{67-18} = \frac{-28}{49}$

The greatest common factor of -28 and 49 is 7. Divide numerator and denominator by the greatest common factor.

$$\text{AROC} = \frac{-4}{7}$$